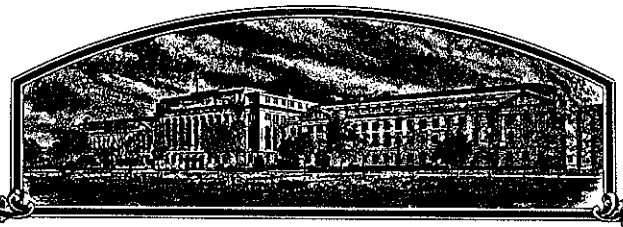
No. 8500159



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## Asgrow Seed Co.

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT IETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT AT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'A3427'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D. C. *this* 30th *day of* May *in the year of our Lord one thousand nine hundred and* eighty-six.

*Attest:*

*Commissioner*
*Plant Variety Protection Office*
*Agricultural Marketing Service*

*Secretary of Agriculture*

APPROVAL EXPIRES 4-30-86

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

*(Instructions on reverse)*

| 1. NAME OF APPLICANT(S) | 2. TEMPORARY DESIGNATION | 3. VARIETY NAME |
|---|---|---|
| Asgrow Seed Company | XP3227 | A3427 |

| 4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)* | 5. PHONE *(Include area code)* | FOR OFFICIAL USE ONLY |
|---|---|---|
| 7000 Portage Road (Gull Road, Building 190)<br>Kalamazoo, MI 49001 | (616) 385-6605 | PVPO NUMBER<br>8500159 |

| 6. GENUS AND SPECIES NAME | 7. FAMILY NAME *(Botanical)* | FILING | DATE / TIME |
|---|---|---|---|
| Glycine Max | Leguminosae | | DATE 5/29/85<br>TIME 11:00 ☒ A.M. ☐ P.M. |

| 8. KIND NAME | 9. DATE OF DETERMINATION | FEES RECEIVED | AMOUNT FOR FILING / DATE | AMOUNT FOR CERTIFICATE / DATE |
|---|---|---|---|---|
| Soybean | September 1980 | | $ 1,800<br>5/29/85 | $ 200.00<br>4/3/86 |

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Corporation

| 11. IF INCORPORATED, GIVE STATE OF INCORPORATION | 12. DATE OF INCORPORATION |
|---|---|
| Delaware | 1968 |

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Mr. John A. Batcha (9620-190-25)
Asgrow Seed Company
Gull Road, Building 190
Kalamazoo, MI 49001
PHONE *(Include area code)*: (616) 385-6605

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED
- a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- b. ☒ Exhibit B, Novelty Statement.
- c. ☒ Exhibit C, Objective Description of Variety *(Request form from Plant Variety Protection Office.)*
- d. ☒ Exhibit D, Additional Description of Variety.
- e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)* ☐ Yes *(If "Yes," answer items 16 and 17 below)* ☒ No

| 16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? | 17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? |
|---|---|
| ☐ Yes ☐ No | ☐ Foundation ☐ Registered ☐ Certified |

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ Yes *(If "Yes," give date)*
☒ No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES ?
☐ Yes *(If "Yes," give names of countries and dates)*
☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

| SIGNATURE OF APPLICANT | DATE |
|---|---|
| John A. Batcha | April 26, 1985 |
| SIGNATURE OF APPLICANT | DATE |
| | |

FORM WA-470 (7-84) (Edition of 3-84 is obsolete.)

8500159

EXHIBIT A

Origin and Breeding History of the Variety

| | |
|---|---|
| 1978 | Original cross made at Oxford, Indiana<br>Parents: X3836 * A3127<br>(X3836 = Williams * Mack)<br>Cross number: B78439 |
| 1978-79<br>(fall-winter) | 10 F1 plants grown at Florida winter nursery under lighted conditions. |
| 1979<br>(winter-spring) | Bulk population grown at winter nursery. Population sampled by pod-picking from each plant. |
| 1979<br>(summer) | F3 bulk population grown at Oxford, Indiana and the generation advanced by pod-picking. |
| 1980<br>(spring-winter) | F4 bulk population grown at Florida winter nursery. Single plant selections threshed in Florida. |
| 1980<br>(summer) | F5 plant rows grown at Oxford. Plot number B80-61102 was selected for yield testing. |
| 1981 | B80-61367 was tested in Preliminary Yield Test 81P315 as code 27 |
| 1982 to 1984 | Line was grown in Advanced Yield Tests. It was tested as X3227 in 1983; XP3227 in 1984, and named A3427 in the fall of 1984. Replicated progeny maintenance tests were grown in 1983 and 1984 and only pure breeding, resistant selections were bulked to produce the breeder seed lot. |

Trial evaluations since 1981 indicate A3427 is uniform and stable within commercially acceptable limits. As with other soybean varieties, variants or offtypes can occur for almost any characteristic during the course of repeated sexual reproduction.

EXHIBIT B

Novelty Statement

To our knowledge, the soybean variety that most resembles A3427 is A3127. Both varieties are indeterminate types having shortened internodes. A3427 differs from A3127 in Phytophthora resistance; A3127 is susceptible to Phytophthora and A3427 has the major gene $Rps_1^c$ conferring resistance. Refer to EXHIBIT D for verification by Ohio State concerning the Phytophthora resistance.

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
*(Soybean)*

# OBJECTIVE DESCRIPTION OF VARIETY
## *SOYBEAN (Glycine max* L.*)*

| NAME OF APPLICANT(S) | TEMPORARY DESIGNATION | VARIETY NAME |
|---|---|---|
| Asgrow Seed Company | XP3227 | A3427 |

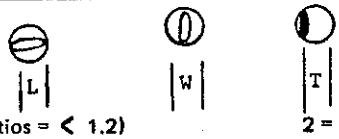
ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
7000 Portage Road
Kalamazoo, MI 49001

FOR OFFICIAL USE ONLY
PVPO NUMBER
8500159

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]).

**1. SEED SHAPE:**

[1]




1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

**2. SEED COAT COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

**3. SEED COAT LUSTER: (Mature Hand Shelled Seed)**

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

**4. SEED SIZE: (Mature Seed)**

[1][4] Grams per 100 seeds

**5. HILUM COLOR: (Mature Seed)**

[6] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

**6. COTYLEDON COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green

**7. SEED PROTEIN PEROXIDASE ACTIVITY:**

[2] 1 = Low 2 = High

**8. SEED PROTEIN ELECTROPHORETIC BAND:**

[1] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

**9. HYPOCOTYL COLOR:**

[4] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

**10. LEAFLET SHAPE:**

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

4

**11. LEAFLET SIZE:**

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17')
3 = Large ('Crawford'; 'Tracy')

**12. LEAF COLOR:**

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton')
3 = Dark Green ('Gnome'; 'Tracy')

**13. FLOWER COLOR:**

[2] 1 = White 2 = Purple 3 = White with purple throat

**14. POD COLOR:**

[1] 1 = Tan 2 = Brown 3 = Black

**15. PLANT PUBESCENCE COLOR:**

[2] 1 = Gray 2 = Brown (Tawny)

**16. PLANT TYPES:**

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton')
3 = Bushy ('Gnome'; 'Govan')

**17. PLANT HABIT:**

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will')
3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

**18. MATURITY GROUP:**

[0 6] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V
9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

**19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**

BACTERIAL DISEASES:

[2] Bacterial Pustule *(Xanthomonas phaseoli* var. *sojensis)*

[2] Bacterial Blight *(Pseudomonas glycinea)*

[0] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

[2] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

[0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [ ] Other *(Specify)* _____

[0] Target Spot *(Corynespora cassiicola)*

[0] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*

[0] Powdery Mildew *(Microsphaera diffusa)*

[0] Brown Stem Rot *(Cephalosporium gregatum)*

[0] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

5

**19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)**

FUNGAL DISEASES: (Continued)

[1] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[2] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

[2] Race 1 [2] Race 2 [2] Race 3 [1] Race 4 [1] Race 5 [2] Race 6 [2] Race 7

[2] Race 8 [2] Race 9 [ ] Other *(Specify)* _____

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

[0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

[0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

[1] Race 1 [1] Race 2 [1] Race 3 [1] Race 4 [ ] Other *(Specify)* _____

[0] Lance Nematode *(Hoplolaimus Colombus)*

[0] Southern Root Knot Nematode *(Meloidogyne incognita)*

[0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[0] OTHER DISEASE NOT ON FORM *(Specify):* _____

**20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**

[1] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

**21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[0] Other *(Specify)* _____

**22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.**

| CHARACTER | NAME OF VARIETY | CHARACTER | NAME OF VARIETY |
|---|---|---|---|
| Plant Shape | A3127 | Seed Coat Luster | A3127 |
| Leaf Shape | A3127 | Seed Size | A3127 |
| Leaf Color | A3127 | Seed Shape | A3127 |
| Leaf Size | A3127 | Seedling Pigmentation | A3127 |
| | | | |

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

| VARIETY | NO. OF DAYS MATURITY | PLANT LODGING SCORE | CM PLANT HEIGHT | LEAFLET SIZE | | SEED CONTENT | | SEED SIZE G/100 SEEDS | NO. SEEDS/ POD |
|---|---|---|---|---|---|---|---|---|---|
| | | | | CM Width | CM Length | % Protein | % Oil | | |
| A3427 Submitted | 125.5 | 1.8 | 88 | 10 | 13.5 | 38.4 | 21.0 | 14.4 | 62 |
| A3127 Name of Similar Variety | 124 | 1.7 | 88 | 10 | 13.5 | 40.0 | 21.1 | 14.6 | 60 |

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:


1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.

2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.

3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-$A_2$ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.

4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

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EXHIBIT D
Additional Description of the Variety

1984 OHIO SOYBEAN PERFORMANCE TRIALS

Special Phytophthora Evaluaition Test
For Breeding Lines and Experimentals

| ENTRY | FIELD TOLERANCE RATING | Race Reaction | | | |
|---|---|---|---|---|---|
| | | 1 | 3 | 4 | 7 |
| Asgrow XP3670 | 3.4 | R | S | S | S |
| Asgrow A4271 | 3.0 | S | S | S | S |
| Asgrow XP3227 = A3427 | 2.5 | R | R | S | R |
| Asgrow XP3803 = A3803 | 3.0 | R | S | S | S |
| Asgrow XP3529 | 2.8 | S | S | S | S |

C:PVP.385

Asgrow Seed Company
PVP Application - Soybean A3427
April 26, 1985

8500159

EXHIBIT E

Statement of the Basis of Applicant's Ownership

A3427 was originated and developed by Brian J. Moraghan, Asgrow Plant Breeder. By agreement between employee and Asgrow Seed Company, all rights to any invention, discovery, or development made by an employee are assigned to the Company. No rights to such invention, discovery, or development are retained by the employee.

mga
b:A3427ExE